IN THE CLAIMS

Please amend the claims as follows: Claims 28-30 are cancelled.

1. (Previously Presented) A kneadable and moldable bone-replacement material which consists of a mixture of:

A) calcium-containing ceramic particles wherein the ceramic particles comprise a calcium-phosphate ratio having a molar Ca/P relationship between 1.0 and 2.0, wherein the calcium phosphate is selected from the following group: : Dicalcium-phosphate-dihydrate (CaHPO4 x 2 H2O), dicalcium-phosphate (CaHPO4), alpha-tricalcium-phosphate (alpha-Ca3(PO4)2), beta-tricalcium-phosphate (beta-Ca3(PO4)2), calcium-deficient hydro-xylapatite (Ca9(PO4)5(HPO4)OH), hydro-xylapatite (CA10(PO4)6OH)2), carbonated apatite (Ca10(PO4)3(CO3)3(OH)2), flouride-apatite (Ca10(PO4)6(F,OH)2), chloride-apatite (Ca10 (PO4)6(Cl,OH)2), whitlockite ((Ca,Mg)3(PO4)2), tetracalcium-phosphate (Ca4(PO4)2O), oxyapatite (CA10(PO4)6O), beta-calcium-pyrophosphate (beta-Ca2(P2O7), alpha-calcium-pyrophosphate, gamma-calcium-pyrophosphate, octo-calcium-phosphate (Ca8H2(PO4)6 x 5 H2O), wherein at least 50% of the ceramic particles have a pore size between 100 and 500 micrometers, wherein a bulk density of the ceramic particles is between 0.6 g/ccm and 1.0 g/ccm, wherein the jarring density of the ceramic particles is between 0.7 g/ccm and 1.1 g/ccm and wherein an average diameter of the ceramic particles is between 100 and 250 micrometers. ; and

B) a hydrogel or a substance that can be swelled into a hydrogel, and wherein:

C) the ceramic particles are of fully synthetic origin;

D) the individual ceramic particles have at least a partially cohesive, porous structure; and

E) the majority of the ceramic particles have a non-spheric shape.

2. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein the ceramic particles have an angular shape.

3. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein the ceramic particles have a sphericity relationship S=Dmax/Dmin a largest diameter Dmax and a smallest diameter Dmin which is larger than 1.2.

4. (Previously Presented) The bone-replacement material in accordance with claim 3, wherein the sphericity relationship S is larger than 3.

5. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein at least 50% of the ceramic particles have a non-spheric shape.

6. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein pore size of the ceramic particles is between 1 and 500 micrometers.

7.-8. (Canceled)

9. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein the pore size is between 340 and 450 micrometers.

10. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein porosity of the ceramic particles is between 60 and 90 percent.

11.-16. (Canceled)

17. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein a share of ceramic particles of non-spheric shape is at least 60%.

18.-20. (Canceled)

21. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein ceramic particles with an average diameter of 100 to 250 micrometers are used together with those having an average diameter of 250 to 500 micrometers and/or together with those having an average diameter of 0.5 to 5.6 mm.

22.-25 (Canceled)

26. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein the ceramic particles consist of a mixture of different calcium-phosphates.

27-30. (Canceled)

31. (Previously Presented) The bone-replacement material in accordance with claim 1, further comprising metallic or semi-metallic ion shares as additives.

32. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein the hydrogel or the substance which can be swelled into a hydrogel consists of fully synthetic substances.

33. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein the hydrogel or the substance which can be swelled into a hydrogel consists of natural biological substances, preferably of plant origin.

34. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein the hydrogel or the substance which can be swelled into a hydrogel consists of a biotechnologically generated substance.

35. (Previously Presented) The bone-replacement material in accordance with one claim 32, wherein the hydrogel or the substance which can be swelled into a hydrogel consists of a mixture of fully synthetic, natural biological or biotechnologically generated substances.

36. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein the hydrogel or the substance which can be swelled into a hydrogel contains one of the following components: a) polyamino-acids or their derivatives, preferably polylysin or gelatin; b) polysaccharides and their derivatives, preferably glycosaminoglycane or alginate; c) polylipides, fatty acids and their derivatives; d) nucleotides and their derivatives; or a combination of the components as listed in a) through d).

37. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein the hydrogel or the substance which can be swelled into a hydrogel contains one of the following components: a) polymethylenoxide or its derivatives; b) polyethylene, polyethylenoxide or their derivatives; c) polypropylene, polypropylenoxide or their derivatives; d) polyacrylate or its derivatives; or a combination of the components as listed in a) through d).

38. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein the hydrogel or the substance which can be swelled into a hydrogel consists of either a glycosaminoglycane or a proteoglycane or a mixture of those two substances.

39. (Previously Presented) The bone-replacement material in accordance with claim 38, wherein the glycosaminoglycane is a hyaluron-acid, chondroitinsulfate, dermatansulfate, heparansulfate, heparine or keratansulfate.

40. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein a concentration of the ready-to-use, hydrated hydrogel or a ready-to-use, hydrated substance which can be swellen into a hydrogel is between 0.1% and 20.0%.

41. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein a molecular weight of the hydrogel or the substance which can be swelled into a hydrogel is larger than 300,000 Dalton and preferably larger than 500,000 Dalton.

42. (Previously Presented) The bone-replacement material in accordance with claim 41, wherein the molecular weight of the hydrogel or the substance which can be swelled into a hydrogel is larger than 1,000,000 Dalton and preferably larger than 1,500,000 Dalton.

43. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein the hydrogel is a liquid solution of a hyaluronate.

44. (Previously Presented) The bone-replacement material in accordance with claim 43, wherein the liquid solution of the hydrogel contains less than 99% water.

45. (Previously Presented) The bone-replacement material in accordance with claim 43, wherein the liquid solution of the hydrogel contains less that 96.5% water.

46. (Previously Presented) The bone-replacement material in accordance with claim 43, wherein the molecular weight of the hyaluron-acid used is larger than 1.5×10^6 Dalton.

47. (Previously Presented) The bone-replacement material in accordance with claim 43, wherein the molecular weight of the hyaluron-acid used is between 0.5×10^6 and 1.0×10^6 Dalton.

48. (Previously Presented) The bone-replacement material in accordance with claim 43, wherein the molecular weight of the hyaluron-acid used is smaller than 1×10^6 and preferably smaller than 0.5×10^6 Dalton.

49. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein a specific gravity of the calcium-containing, porous ceramic particles is between 0.5 and 1.0 g/ccm.

50. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein a weight relationship A/B between the hydrated hydrogel and the calcium-containing ceramic particles is larger than 0.2.

51. (Previously Presented) The bone-replacement material in accordance with claim 50, wherein the weight relationship A/B is between 0.2 and 0.5.

52. (Previously Presented) The bone-replacement material in accordance with claim 50, wherein the weight relationship A/B is between 0.5 and 0.9.

53. (Previously Presented) The bone-replacement material in accordance with claim 50, wherein the weight relationship A/B is between 0.9 and 1.3.

54. (Previously Presented) The bone-replacement material in accordance with claim 50, wherein the weight relationship A/B is between 1.3 and 2.0.

55. (Previously Presented) The bone-replacement material in accordance with claim 50, wherein the weight relationship A/B is between 2 and 5.

56. (Previously Presented) The bone-replacement material in accordance with claim 50, wherein the weight relationship A/B is larger than. 5.